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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/416,715	10/13/1999	MANFRED LEMBKE	10191/1201	6509

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EXAMINER	
ZACHARIA, RAMSEY E	

ART UNIT	PAPER NUMBER
1773	

DATE MAILED: 04/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/416,715	LEMBKE ET AL.	
	Examiner	Art Unit	
	Ramsey Zacharia	1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-6,8-10 and 12-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 October 1999* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 24 March 2004 has been entered.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

3. Claims 1, 4-6, 9, 10, 12, 13, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasui et al. (U.S. Patent 5,465,618) in view of Kappler (U.S. Patent 5,744,561).

Yasui et al. teach a thermal flow sensor provided at a predetermined position within a housing defining the main passage of a fluid (column 1, lines 9-31). The sensor comprises a zirconia base with resistor elements made of platinum or nickel, i.e. metals (column 4, line 35-column 5, line 5). The sensor further comprises a protective layer over the resistor elements and zirconia base in areas not covered by resistor elements (column 4, lines 55-57).

Yasui et al. is silent regarding the composition of the protective layer.

Kappler teaches a fluorinated polymer having good heat stability that may be used as a protective coating (column 1, lines 5-11). The polymer is a copolymer of trifluoroethylene and tetrafluoroethylene (column 1, lines 43-50). Since trifluoroethylene (i.e. CF_2=CFH) is partially fluorinated, polymers containing trifluoroethylene will also be partially fluorinated.

One of ordinary skill in the art would be motivated to use the coating of Kappler as the protective layer of Yasui et al. because it has good heat stability in addition to protective properties.

Regarding the limitations of claims 4-6 and 10, the stability temperature, surface energy, adhesion of pollutants, and decomposition temperature are taken to be physical properties of the material. Since Kappler uses a partially fluorinated polymer for the protective coating as is done in the instant application, the protective coating of Kappler is taken to inherently possess the same material properties as that of the instant invention.

Regarding claim 9, the amount of protection provided by a protective layer is a function of the thickness of the layer. That is, the thickness of the protective layer is a results effective variable. It would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the thickness of the coating layer, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2nd 272, 205 USPQ 215 (CCPA 1980).

Moreover, the protective coating of Kappler is taken to pass a cross-cut test since it is the same material as used in the instant invention and is designed to act as a protective layer.

4. Claims 1, 4-6, 8-10, and 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugimoto et al. (U.S. Patent 4,606,952) in view of Yasui et al. (U.S. Patent 5,465,618) and Kappler (U.S. Patent 5,744,561).

Sugimoto et al. teach an automotive fuel hose and fuel pump diaphragm comprising a laminate of a fluororubber inner layer bonded to an outer layer (column 1, lines 9-13).

Sugimoto et al. do not teach the presence of a sensor element as recited in claim 1.

Yasui et al. teach a thermal flow sensor provided at a predetermined position within a housing defining the main passage of a fluid (column 1, lines 9-31). The sensor comprises a zirconia base with resistor elements made of platinum or nickel, i.e. metals (column 4, line 35-column 5, line 5). The sensor further comprises a protective layer over the resistor elements and zirconia base in areas not covered by resistor elements (column 4, lines 55-57).

Kappler teaches a fluorinated polymer having good heat stability that may be used as a protective coating (column 1, lines 5-11). The polymer is a copolymer of trifluoroethylene and tetrafluoroethylene (column 1, lines 43-50). Since trifluoroethylene (i.e. CF_2=CFH) is partially fluorinated, polymers containing trifluoroethylene will also be partially fluorinated.

One of ordinary skill in the art would be motivated to use the sensor of Yasui et al. (that is designed to be used in the main passage of flowing fluids) in the hose or pump of Sugimoto et al. to allow for detection of, and subsequent control over, the rate of flow through the hose or pump.

One of ordinary skill in the art would be motivated to use the coating of Kappler as the protective layer of Yasui et al. because it has good heat stability in addition to protective properties.

Regarding the limitations of claims 4-6 and 10, the stability temperature, surface energy, adhesion of pollutants, and decomposition temperature are taken to be physical properties of the material. Since Kappler uses a partially fluorinated polymer for the protective coating as is done in the instant application, the protective coating of Kappler is taken to inherently possess the same material properties as that of the instant invention.

Regarding claim 9, the amount of protection provided by a protective layer is a function of the thickness of the layer. That is, the thickness of the protective layer is a results effective variable. It would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the thickness of the coating layer, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2nd 272, 205 USPQ 215 (CCPA 1980).

Moreover, the protective coating of Kappler is taken to pass a cross-cut test since it is the same material as used in the instant invention and is designed to act as a protective layer.

Regarding claim 16, the hose or pump containing the probe reads on a housing for the probe since the probe is contained (or housed) in the hose or pump.

5. Claims 1, 4-6, 8-10, 12, 13, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasui et al. (U.S. Patent 5,465,618) in view of Franz et al. (U.S. Patent 5,308,705).

Yasui et al. teach a thermal flow sensor provided at a predetermined position within a housing defining the main passage of a fluid (column 1, lines 9-31). The sensor comprises a zirconia base with resistor elements made of platinum or nickel, i.e. metals (column 4, line 35-

column 5, line 5). The sensor further comprises a protective layer over the resistor elements and zirconia base in areas not covered by resistor elements (column 4, lines 55-57).

Yasui et al. is silent regarding the composition of the protective layer.

Franz et al. teach a water and dirt repellent coating that is durable which comprises a perfluoroalkylsilane, i.e. a fluorine-containing silane (column 1, lines 50-58). The coating may be applied to metal or metal oxide substrates (column 4, lines 15-25).

One of ordinary skill in the art would be motivated to use the coating of Franz et al. as the protective layer of Yasui et al. because it has good durability in addition to its repellent properties.

Regarding the limitations of claims 4, 5, and 10, the stability temperature, surface energy, and decomposition temperature are taken to be physical properties of the material. Since Franz et al. use a partially fluorinated polymer for the protective coating as is done in the instant application, the protective coating of Franz et al. is taken to inherently possess the same material properties as that of the instant invention.

Regarding claim 9, the amount of protection provided by a protective layer is a function of the thickness of the layer. That is, the thickness of the protective layer is a results effective variable. It would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the thickness of the coating layer, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2nd 272, 205 USPQ 215 (CCPA 1980).

Moreover, the protective coating of Franz et al. is taken to pass a cross-cut test since it is the same material as used in the instant invention and is designed to act as a protective layer.

6. Claims 1, 4-6, 8-10, and 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugimoto et al. (U.S. Patent 4,606,952) in view of Yasui et al. (U.S. Patent 5,465,618) and Franz et al. (U.S. Patent 5,308,705).

Sugimoto et al. teach an automotive fuel hose and fuel pump diaphragm comprising a laminate of a fluororubber inner layer bonded to an outer layer (column 1, lines 9-13).

Sugimoto et al. do not teach the presence of a sensor element as recited in claim 1.

Yasui et al. teach a thermal flow sensor provided at a predetermined position within a housing defining the main passage of a fluid (column 1, lines 9-31). The sensor comprises a zirconia base with resistor elements made of platinum or nickel, i.e. metals (column 4, line 35-column 5, line 5). The sensor further comprises a protective layer over the resistor elements and zirconia base in areas not covered by resistor elements (column 4, lines 55-57).

Franz et al. teach a water and dirt repellent coating that is durable which comprises a perfluoroalkylsilane, i.e. a fluorine-containing silane (column 1, lines 50-58). The coating may be applied to metal or metal oxide substrates (column 4, lines 15-25).

One of ordinary skill in the art would be motivated to use the sensor of Yasui et al. (that is designed to be used in the main passage of flowing fluids) in the hose or pump of Sugimoto et al. to allow for detection of, and subsequent control over, the rate of flow through the hose or pump.

One of ordinary skill in the art would be motivated to use the coating of Franz et al. as the protective layer of Yasui et al. because it has good durability in addition to its repellent properties.

Regarding the limitations of claims 4, 5, and 10, the stability temperature, surface energy, and decomposition temperature are taken to be physical properties of the material. Since Franz et al. use a partially fluorinated polymer for the protective coating as is done in the instant application, the protective coating of Franz et al. is taken to inherently possess the same material properties as that of the instant invention.

Regarding claim 9, the amount of protection provided by a protective layer is a function of the thickness of the layer. That is, the thickness of the protective layer is a results effective variable. It would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the thickness of the coating layer, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2nd 272, 205 USPQ 215 (CCPA 1980).

Moreover, the protective coating of Franz et al. is taken to pass a cross-cut test since it is the same material as used in the instant invention and is designed to act as a protective layer.

Regarding claim 16, the hose or pump containing the probe reads on a housing for the probe since the probe is contained (or housed) in the hose or pump.

Response to Arguments

7. Applicant's arguments filed 24 March 2004 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramsey Zacharia whose telephone number is (571) 272-1518. The examiner can normally be reached on Monday through Friday from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau, can be reached on (571) 272-1516. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ramsey Zacharia
Primary Examiner
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